FTA RESEARCH
FEDERAL TRANSIT ADMINISTRATION

REPORT SUMMARY

U.S. Department of Transportation
Federal Transit Administration

Remote Infrared Audible Signage (RIAS) Pilot Program Report

Background

In 2004, the Central Puget Sound Regional Transit Authority (Sound Transit) installed a Remote Infrared Audible Signage (RIAS) system at two of its major regional transit stations to enable persons with visual and cognitive disabilities to travel independently on public transit. The Remote Infrared Audible Sign Model Accessibility Program (RIAS MAP) is funded by the Federal Transit Administration (FTA) to evaluate the effectiveness of RIAS systems. As a continuation of this evaluation within a more comprehensive, multi-modal public transportation environment, Sound Transit received a Research and Technolgy grant from FTA in 2007 to expand and evaluate the effectiveness of its RIAS program. Subsequently, Sound Transit installed the RIAS wayfinding technology with the registered trademark name Talking Signs (Talking Signs, Inc.) at nine multi-modal facilities in the Central Puget Sound Region. This report describes the design, installation, and testing of the technology.

Objectives

There are two primary objectives for this research:

1. Measure the effectiveness of the Sound Transit RIAS system by using persons with visual or cognitive disabilities to test the installed system and provide feedback, as well as observing the testers' ability to use the system during structured testing.
2. Measure cost implications for future expansion of the RIAS system for both Sound Transit and other regional public transit agencies.

Findings and Conclusions

Conclusions from this research make specific recommendations to Sound Transit regarding further expansion of the RIAS system. The main goal for these recommendations is to provide Sound Transit with the next steps that should be taken to implement a fully functional wayfinding system throughout the transit network. Another goal is to preserve the investment Sound Transit has made in hardware, staff, and consultant time. The following are the main recommendations:

- Begin the next phase of the RIAS MAP to continue expansion and further evaluation of the RIAS system.
- Include funding for further evaluation of the RIAS and other wayfinding systems.

- Invite other wayfinding systems that are available for people with visual or cognitive disabilities to participate in system demonstrations and to provide bids for implementation to Sound Transit.
- Conduct additional research and evaluation of existing Step-Hear and Talking Lights installations, as well as other similar systems that are installed at the time of the evaluation.
- Further evaluate the cost-effectiveness of using a GPS-based solution for outdoor navigation in combination with Talking Signs, Talking Lights or Step-Hear for indoor and bus applications.
- Using Google Transit or the regional Trip Planner system, build upon King County Metro's efforts to create a data extraction process for its schedule and bus stop locations.
- Consider use of the Google Time Table Publisher open interface and database for the Google Transit Planner.
- Further determine overall public interest in using a wayfinding system to assist in determining potential funds for expanding the system.
- Expand the wayfinding system once evaluations are complete and funding is in place.

Benefits

There are many benefits, such as increased independence, that the blind, visually, or cognitively disabled traveler will experience in using a wayfinding system integrated into a public transportation environment. The Talking Signs or RIAS has been shown to be a system with many of these proven benefits, including potential savings resulting from decreased paratransit operational costs. Another significant benefit has been to research the use of wayfinding systems and other technologies for people with visual disabilities in combination with GPS, infrared, radio frequencies (RF), and other methods to provide a more complete picture for the visually impaired/disabled traveler. Currently, no other system on the market has the same proven level of effectiveness for blind or visually impaired people as Talking Signs.

Most current wayfinding technologies determine the traveler's position and then access predefined locations in a database to calculate step-by-step paths. The systems explored in this report show a trend toward pursuing an integrated solution utilizing GPS and smartphone technologies. Both GPS-based solutions and Talking Lights appear to be following this trend for their systems, while Talking Signs and Step-Hear are more focused on item identification rather than locating the traveler and providing directions based upon the traveler's location.

Regardless of which wayfinding system is used, there appear to be some cost savings in operation of an agency's paratransit system. And as market competition helps drive implementation costs down, another key benefit would be a system that is helpful to every traveler, including the visually and cognitively disabled.

Project Information

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This research project was conducted by Michael Miller of Sound Transit. For more information, contact FTA Project Manager William Wiggins at (202) 366-3651, William.Wiggins@dot.gov.
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